



FAX in advance (8 pages)

European Patent Office

80298 Munich

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International Patent Application: PCT/DE2005/000544

Title: "Device for Machining Components"

Applicant: MTU Aero Engines GmbH

Our Ref: P804783/WO/1

In response to the written notice of the International Searching Authority (Rule 43 to .1 PCT) dated August 5, 2005:

The Applicant is of the opinion that the original patent Application cannot be upheld in view of the state of the art known from document D1 as well as the state of the art according to Fig. 6 of the present Application for lack of adequate differentiation. However, for the reasons to be explained below, the Applicant is of the opinion that there are still some features which fulfill the criteria of "novelty" and "inventive step."

Document D1 relates to a mobile machining station for rotary machining of large, mechanically sensitive modular units, in particular gas turbine propulsion units. The modular units are machined in their installed operating position, suspended from the suspension elements as are used in mass production, i.e., under the weight-induced loads and deformation stresses that also occur during operation. This has the advantage that, after machining, the dimensional stability during operation can be improved. This device has a radial arm (26) that can be rotated by an electric motor and has a tool head with a lathe tool and with adjusting kinematics for the axial and radial movements of the lathe tool in relation to the arm, said tool head being mounted on the radial outer end of the radial arm. The arm is rotatably and centrally coupled to the modular unit, specifically to the low-pressure shaft of the driving mechanism, and is then connected to the machining station (drive shaft, exhaust device, etc.). For installation, as well as for actual machining, a relatively large free inside cross-section that is open at one axial end is necessary on the component(s) of the modular unit, such as those that are preferably offered by the fan housing of a jet

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engine. The inside contour to be machined forms essentially a circular cylinder, optionally with minor variations in diameter. It should be pointed out again that the component is stationary and the tool mount is rotating. The device according to document D1 is not suitable from the standpoint of design for internal machining of rotors assembled from disks having deep, narrow chambers/undercuts.

The device according to the present Application was developed specifically for the tight spatial conditions in rotors assembled from disks. The kinematic design is such that the tool mount is held in a rotationally fixed/static manner and that the component rotates. There is no centering coupling/connection to the component. The area (projection 25, tool mount 24) projecting radially away from the drill (23) is divided for assembly/disassembly. The drive for the pivoting movement of the lathe tool runs through the drill rod (23) and the tool mount (24). None of these features exist in D1.

Therefore, the Applicant is of the opinion that document D1 does not describe the closest prior art, but, instead, Fig. 6 of the present Application represents the closest prior art.

Therefore, a new patent Application, now with only five claims, is being submitted. The new Claim 1 combines features from the original Claims 1, 2, 4, 5 and 6. It is generically limited to rotary machining of rotors assembled from disks. The original Claim 3 has been omitted. The original Claims 7 through 10 form the new Claims 2 through 5.

The introductory portion of the Specification, including the title, has been adapted to the new version of the claims. The state of the art from document D1 is outlined briefly.



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All changes can be seen from the original handwritten, corrected version herewith attached.

MTU Aero Engines GmbH

A handwritten signature in black ink, appearing to read "Pfister".

Pfister
AV48977

Power of Attorney 48977

Attachments:

Patent Claims 1 through 5 (2 pages), by fax and mail,

Description pages 1, 1A and 2, by fax and mail,

Corrections in red (5 pages, original), by mail only